

Amendments to the Specification:

Please replace paragraph [0037] with the following amended paragraph:

[0037] Digital front-end AGC stage 20 similarly applies AGC to the digital signal. According to this embodiment of the invention, the gain value $gain_{20}$ of digital front-end AGC stage 20 similarly follows a linear AGC control characteristic:

$$gain_{20} = a_1 + b_1 G_{n-1} \quad (2)$$

where G_{n-1} is a digital control value (e.g., of eight bits or more, for precision) for setting the AGC gain, and where a_1 and b_1 are the y-intercept and slope, respectively, of the linear AGC control function. In one exemplary implementation of this invention, the product of the gain applied by front-end AGC stage 20 with the previously-applied coarse AGC gain may vary in a range from 0.25 to 4.00, each stage applying a gain ranging from 0.50 to 2.00. The amplified input video signal is then clipped, in the conventional manner, by clip stage 42, and is then forwarded along the data path of video decoder 10. As shown in Figure 2, the amplified and clipped input signal is converted into the digital domain by one or both of ADCs 22/18, and processed according to its input format by input format function 24. Ultimately, the input signal (now in the digital domain) is then processed by separation and filtering function 26, by way of which the luma and chroma signals are separated, and eventually demodulated and converted into the digital component values as described above.

Please replace paragraph [0038] with the following amended paragraph:

[0038] According to the preferred embodiment of the invention, front-end AGC stage 20 adjusts its current gain control value G_{n-1} to provide an updated gain control value G_n based on the measurements of multiple attributes in the video signal. As shown in Figure 3, these measurements include measurements of the input signal after gain stage 40-20 and clip function 42, prior to luma and chroma separation. Some of these attributes may be considered as indirectly correlating to the output signal, while others directly correlate to the output. These measurements of the various attributes of the signal are applied to gain update calculator 46, by way of which the next gain control value G_n is derived. In addition, certain parameters regarding the front-end AGC gain are communicated to back-end AGC function 28, as shown in Figure 3. The particular circuit function within analog front-end 15 that makes these measurements and update calculations may be implemented by custom logic, or by programmable logic under the control of a software routine, or alternatively these measurements and calculations may be made by other circuitry in video decoder 10, for example digital processor 35 (Figure 2) and forwarded to analog front-end 15 as a control signal. While the following description will refer to functions within analog front-end 15 as performing gain update and storage functions, those skilled in the art having reference to this specification will realize that such functions may be implemented in any one of a number of ways, without departing from this invention.